

Andrew Riddle

Austin, TX

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Data Scientist

I am a data scientist with a natural curiosity about how the world works and won't stop working on a problem until I've figured it out. Hard work is vital, but being able to relax and have fun is just as important. My experience as an astronomy researcher gave me the tools to perform complex data analysis and modeling, but just as importantly, the ability to communicate these ideas to people in and outside of the field. I seek out projects with a tangible human impact, even if it's just making a routine task a little easier.

Skill Level	Languages	Libraries	Machine Learning Algorithms	Tools
★ Intermediate+	★ Python	★ Numpy	★ Linear/Logistic Regression	■ Git
■ Intermediate	■ R	★ Pandas	■ Markov-Chain Monte Carlo	◆ Spark
◆ Beginner	■ Bash/Shell	★ Scikit-learn	■ Decision Trees	◆ Azure
○ Basic/no experience	■ SQL	■ Matplotlib	■ Ensemble Methods	○ Hadoop
	◆ Scala	■ Scipy	■ KNN	○ Tableau
	◆ C++	◆ Keras	◆ SVM	
	◆ HTML/CSS	◆ TensorFlow	◆ Neural Networks	
	○ Java		◆ K-Means/DBSCAN	
	○ Ruby			

ADDITIONAL SKILLS

Oral Presentations: Gave 9 research presentations to members of the UT astronomy department and at astronomy conferences.

Writing: Wrote 3 successful proposals to receive observing time on the 2.7-m HJS Telescope at McDonald Observatory and the LCOGT network of telescopes.

EXPERIENCE

General Assembly, Austin, TX

September 2017 – December 2017

Data Science Fellow

- Participated in a full-time immersive Data Science course, completing in-class projects, Kaggle competitions, and personal projects focused on real-world applications of data science principles and best practices.
- Acquired, cleaned, and explored large datasets using Python and SQL in order to present findings to both technical and non-technical audiences.
- Developed a portfolio of individually and collaboratively focused projects, making use of many different techniques and tools. Class projects and labs include: Titanic Kaggle dataset, Boston housing, Spam detection, API/web scraping, Wisconsin breast cancer data set, and Iris data set.
- In-depth analysis on three projects:
 - Ames housing – predicting sale prices of houses (regression) as well as abnormal sales (classification)
 - March Madness – predicting the probability that one team will beat another
 - Board game analysis – predicting the rating and market value of board games

The University of Texas at Austin, Austin, TX

August 2011 – May 2016

Graduate Research Assistant

- Built a Python routine to perform a Markov Chain Monte Carlo (MCMC) analysis on observational data of 9-parameter eclipsing binary star systems to find the best-fit orbital parameters and presented the results at a meeting of the American Astronomical Society (AAS) as well as a seminar at UT.
- Developed a Python implementation of the TODCOR algorithm, a two-dimensional cross-correlation algorithm used to measure the radial velocity of stars in a binary system, and presented the results of using the algorithm on several star systems at AAS and Cool Stars conferences as well as a seminar at UT.
- Designed a Python/bash algorithm to perform real-time imaging analysis of data taken from the 0.8-m telescope at McDonald Observatory to find and measure stellar eclipses and presented the results in a seminar at UT.
- Integrated a variety of imaging data from many different sources into one comprehensive database to allow for easier computational analysis.
- Updated image analysis software to work with a new stellar database using a variety of languages (C, Fortran, IRAF) and used the updated software to measure the motion of near-earth objects to get more precise orbits.
- Collected imaging data using the 0.8-m, 2.1-m Otto Struve, and 2.7-m Harlan J. Smith telescopes at McDonald Observatory as well as the LCOGT network of telescopes for use in my research.
- Wrote 3 successful proposals for telescope time on the LCOGT network of telescopes and the 2.7-m Harlan J. Smith telescope at McDonald Observatory.

University of Illinois at Urbana-Champaign, Urbana, IL

September 2009 - May 2011

Undergraduate Research Assistant

- Used bash/IRAF scripts to compare the images of stars across multiple filters observed over several decades to match stars with their counterparts in more recent images.
- Implemented Python code to query a stellar database based on user input and return best matches based on various restraints.

The University of Texas at Austin, Austin, TX

August 2011 – May 2016

Teaching Assistant

- Held office hours twice per week, reviewed and graded homework and test questions, and planned a discussion section for 20-100 students over 7 semesters as a teaching assistant for lower and upper level undergraduate astronomy classes.
- Assembled and taught the content for a lecture to an undergraduate astronomy class of 70 students.

University of Illinois at Urbana-Champaign, Urbana, IL

January 2011 - May 2011

Teaching Assistant

- Graded assignments for 20 students of an upper level undergraduate astronomy course.
- Held office hours twice a week to help students with course material.

PROJECTS

- Analyzed data from the Board Game Geek API to predict what makes a game fun (highly rated).
- Formulated Python scripts to interface and web scrape new components of the gaming software *Magic Workstation* with the existing program.
- Wrote C++ program to run the inventory of a record store as a class project.

EDUCATION

- **General Assembly, Austin, TX**
12-week immersive data science boot camp
- **Data Science Dojo, Austin, TX**
One-week data science boot camp
- **The University of Texas at Austin, Austin, TX**
Completed 5 years of graduate training, working towards a Ph.D. in astronomy
- **The University of Illinois at Urbana-Champaign, Urbana, IL**
Bachelor of Science in Astronomy